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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/747,712	12/23/2003	Melvin Robert Jackson	128521-1	5885

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
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EXAMINER	
ROE, JESSEE RANDALL	

ART UNIT	PAPER NUMBER
1793	

NOTIFICATION DATE	DELIVERY MODE
08/05/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/747,712	JACKSON ET AL.	
	Examiner	Art Unit	
	Jessee Roe	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7-13,15-21 and 23-32* is/are pending in the application.

4a) Of the above claim(s) *23-32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-13,15-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

Claims 1-4, 7-13, 15-21 and 23-32 are pending wherein claims 1, 11, 20 and 21 are amended, claims 5-6, 14 and 22 are canceled; and claims 23-32 are withdrawn from consideration.

Status of Previous Rejections

The previous rejection of claim 18 under 35 U.S.C. 103(a) as being unpatentable over Jackson et al. (US 6,623,692) is withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 7-13, 15-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson et al. (US 6,623,692).

In regards to claim 1, Jackson et al. ('692) discloses an alloy having a composition relative to that of the instant invention as shown in the table on the following page (claim14).

Element	From Instant Claims (atomic percent)	Jackson et al. ('692) (atomic percent)	Overlap (atomic percent)
Pt & Pd	0 – about 49	0 – about 20	0 – about 20
W & Re	about 1 – about 15	0 – about 4	about 1 – about 4
Ru	0 – about 10	about 1.5 – about 4	about 1.5 – about 4
Zr, Ta, Ti, Hf	about 0.1 to about 2	about 3 – about 9	-
Rh	at least about 50	balance (about 63 - about 95.5)	about 63 - about 95.5

The Examiner notes that the disclosed amounts of platinum, palladium, tungsten, rhenium, and ruthenium for a rhodium-based alloy overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of platinum, palladium, tungsten, rhenium, and ruthenium for a rhodium-based alloy from the rhodium-based alloy disclosed by Jackson et al. (‘692) because Jackson et al. (‘692) discloses the same utility throughout the disclosed ranges.

With respect to "a fourth material, said fourth material comprising at least one of zirconium, yttrium, hafnium, tantalum, aluminum, titanium, scandium, elements of the lanthanide series, elements of the actinide series, and combinations thereof, wherein the fourth material is present in an amount from about 0.1 to about 2 atomic percent” as in lines 9-12 of claim 1, Jackson et al. (‘692) discloses about 3 to about 9 atomic percent of at least one precipitating-strengthening metal selected from the group consisting of zirconium, niobium, tantalum, titanium, hafnium and mixtures thereof. The instant claims recite “comprising” which would be open-ended and non-exclusive to additional, unrecited elements and Jackson et al. (‘692) recite an element such as niobium that is not present in the instant claims. MPEP 2111.03. For instance, 1 atomic

percent niobium and 2 atomic percent of one or more of zirconium, hafnium, tantalum, aluminum, and titanium would be within the scope of Jackson et al. (‘692) and read on the instant claims. It would have been obvious to one of ordinary skill in the art to modify the ranges of zirconium, hafnium, tantalum, and titanium such that the "fourth material is present in an amount from about 0.1 atomic % to about 2 atomic %" in order to achieve the desired precipitation strengthening within the alloy (col. 5, line 59 – col. 6, line 18). MPEP 2144.05 II.

With respect to the limitation “wherein said alloy comprises an A1-structured phase at temperatures greater than about 1000°C in an amount of at least about 90% by volume” of claim 1, the Examiner asserts that the alloy of Jackson et al. (‘692) would have the A1 structured phase when subjected to the same treatment because Jackson et al. (’692) discloses substantially the same composition as that of the instant invention. Therefore, substantially similar properties would be expected. MPEP 2112.01 I.

In regards to claims 2-3, Jackson et al. (‘692) discloses about 63 to about 95.5 atomic percent rhodium and 0 to about 20 atomic percent of platinum and palladium (claim 14).

In regards to claim 4, Jackson et al. (‘692) discloses 0 to about 4 atomic percent of tungsten and rhenium, which overlaps the range of about 1 to about 6 atomic percent as in the instant invention. Jackson et al. (‘692) further discloses about 1.5 to about 4 atomicpercent ruthenium, which overlaps the range of “up to about 4 atomic percent” as in the instant invention and that chromium may be present in an amount of up to 0.5

atomic percent, which would be within the range of "said chromium is present in an amount up to about 6 atomic percent" (col. 6, lines 19-34).

In regards to claims 7-8, Jackson et al. (‘692) discloses a graph of oxidation data and oxidation resistance (oxide forming underneath the surface) and weight gain due to internal oxidation (col. 2, line 39, col. 3, lines 8-27, col. 5, lines 43-58, Figure 2 and Example 1). Because Jackson et al. (‘692) discloses substantially similar materials used as a "fourth material”, it would be expected that these materials would form oxides as well. MPEP 2112.01 I. However, the recitation “up to” as in claim 8 would not necessitate the presence of oxide particles because “up to” would include 0 volume percent.

In regards to claim 9, because Jackson et al. (‘692) discloses that the alloy would be rhodium-based and the zirconium, tantalum, titanium, hafnium and niobium would be present in an amount of from about 3 atomic percent to about 9 atomic percent (lesser amount) (solute), it would be expected that these elements would be dissolved in the rhodium alloy (solvent).

In regards to claim 10, Jackson et al. (‘692) discloses an alloy having a composition relative to that of the instant invention as shown in the table below (claim 14).

Element	**From Instant Claims (atomic percent)**	**Jackson et al. ('692) (atomic percent)**	**Overlap (atomic percent)**
Pt & Pd	0 – about 49	0 – about 20	0 – about 20
W & Re	about 1 – about 6	0 – about 4	about 1 – about 4
Ru	0 – about 8	about 1.5 – about 4	about 1.5 – about 4
Zr, Ta, Ti, Hf	about 0.1 to about 2	about 3 – about 9	-
Rh	at least about 50	balance (about 63 - about 95.5)	about 63 - about 95.5

The Examiner notes that the disclosed amounts of platinum, palladium, tungsten, rhenium, and ruthenium for a rhodium-based alloy overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of platinum, palladium, tungsten, rhenium, and ruthenium for a rhodium-based alloy from the rhodium-based alloy disclosed by Jackson et al. (‘692) because Jackson et al. (‘692) discloses the same utility throughout the disclosed ranges.

With respect to "a fourth material, said fourth material comprising at least one of zirconium, yttrium, hafnium, tantalum, aluminum, titanium, scandium, elements of the lanthanide series, elements of the actinide series, and combinations thereof, wherein the fourth material is present in an amount from about 0.1 to about 2 atomic percent” as in lines 9-12 of claim 10, Jackson et al. (‘692) discloses about 3 to about 9 atomic percent of at least one precipitating-strengthening metal selected from the group consisting of zirconium, niobium, tantalum, titanium, hafnium and mixtures thereof. The instant claims recite “comprising” which would be open-ended and non-exclusive to additional, unrecited elements and Jackson et al. (‘692) recite an element such as niobium that is not present in the instant claims. MPEP 2111.03. For instance, 1 atomic percent niobium and 2 atomic percent of one or more of zirconium, hafnium, tantalum, aluminum, and titanium would be within the scope of Jackson et al. (‘692) and read on the instant claims. It would have been obvious to one of ordinary skill in the art to modify the ranges of zirconium, hafnium, tantalum, and titanium such that the "fourth material is

present in an amount from about 0.1 atomic % to about 2 atomic %" in order to achieve the desired precipitation strengthening within the alloy (col. 5, line 59 – col. 6, line 18). MPEP 2144.05 II.

With respect to the limitation “wherein said alloy comprises an A1-structured phase at temperatures greater than about 1000°C in an amount of at least about 90% by volume” of claim 10, the Examiner asserts that the alloy of Jackson et al. (‘692) would have the A1 structured phase when subjected to the same treatment because Jackson et al. (’692) discloses substantially the same composition as that of the instant invention. Therefore, substantially similar properties would be expected. MPEP 2112.01 I.

Still regarding claim 10, Jackson et al. (‘692) discloses about 63 to about 95.5 atomic percent rhodium and 0 to about 20 atomic percent of platinum and palladium (claim 14).

In regards to claim 11, Jackson et al. (‘692) discloses an alloy having a composition relative to that of the instant invention as shown in the table below (claim 14).

Element	From Instant Claims (atomic percent)	Jackson et al. ('692) (atomic percent)	Overlap (atomic percent)
Pt & Pd	0 – about 49	0 – about 20	0 – about 20
W & Re	about 1 – about 15	0 – about 4	about 1 – about 4
Ru	0 – about 10	about 1.5 – about 4	about 1.5 – about 4
Zr, Ta, Ti, Hf	about 0.1 to about 2	about 3 – about 9	-
Rh	at least about 50	balance (about 63 - about 95.5)	about 63 - about 95.5

The Examiner notes that the disclosed amounts of platinum, palladium, tungsten,

rhenium, and ruthenium for a rhodium-based alloy overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of platinum, palladium, tungsten, rhenium, and ruthenium for a rhodium-based alloy from the rhodium-based alloy disclosed by Jackson et al. (‘692) because Jackson et al. (‘692) discloses the same utility throughout the disclosed ranges.

With respect to "a fourth material, said fourth material comprising at least one of zirconium, yttrium, hafnium, tantalum, aluminum, titanium, scandium, elements of the lanthanide series, elements of the actinide series, and combinations thereof, wherein the fourth material is present in an amount from about 0.1 to about 2 atomic percent” as in lines 11-14 of claim 11, Jackson et al. (‘692) discloses about 3 to about 9 atomic percent of at least one precipitating-strengthening metal selected from the group consisting of zirconium, niobium, tantalum, titanium, hafnium and mixtures thereof. The instant claims recite “comprising” which would be open-ended and non-exclusive to additional, unrecited elements and Jackson et al. (‘692) recite an element such as niobium that is not present in the instant claims. MPEP 2111.03. For instance, 1 atomic percent niobium and 2 atomic percent of one or more of zirconium, hafnium, tantalum, aluminum, and titanium would be within the scope of Jackson et al. (‘692) and read on the instant claims. It would have been obvious to one of ordinary skill in the art to modify the ranges of zirconium, hafnium, tantalum, and titanium such that the "fourth material is present in an amount from about 0.1 atomic % to about 2 atomic %" in order to achieve

the desired precipitation strengthening within the alloy (col. 5, line 59 – col. 6, line 18). MPEP 2144.05 II.

With respect to the limitation “wherein said alloy comprises an A1-structured phase at temperatures greater than about 1000°C in an amount of at least about 90% by volume” of claim 11, the Examiner asserts that the alloy of Jackson et al. (‘692) would have the A1 structured phase when subjected to the same treatment because Jackson et al. (’692) discloses substantially the same composition as that of the instant invention. Therefore, substantially similar properties would be expected. MPEP 2112.01 I.

With respect to the recitation “for use in a high temperature, oxidative environment” of claim 11 the Examiner notes that this recitation would not structurally limit the rhodium-based alloy and has therefore been considered an intended use of the alloy. MPEP 2111.02 II.

In regards to claim 12, Jackson et al. (‘692) discloses about 63 to about 95.5 atomic percent rhodium and 0 to about 20 atomic percent of platinum and palladium (claim 14).

In regards to claim 13, Jackson et al. (‘692) discloses 0 to about 4 atomic percent of tungsten and rhenium, which overlaps the range of about 1 to about 6 atomic percent as in the instant invention. Jackson et al. (‘692) further discloses about 1.5 to about 4 atomicpercent ruthenium, which overlaps the range of “up to about 4 atomic percent” and that chromium may be present in an amount of up to 0.5 atomic percent, which would be within the range of "said chromium is present in an amount up to about 6

atomic percent" as in the instant invention (col. 6, lines 19-34).

In regards to claim 15, Jackson et al. (‘692) discloses a graph of oxidation data and oxidation resistance (oxide forming underneath the surface) and weight gain due to internal oxidation (col. 2, line 39, col. 3, lines 8-27, col. 5, lines 43-58, Figure 2 and Example 1). Because Jackson et al. (‘692) discloses substantially similar materials used as a "fourth material”, it would be expected that these materials would form oxides as well. MPEP 2112.01 I.

In regards to claims 16-17 and 19, Jackson et al. (’692) discloses wherein the alloy would be used for blades and vanes for gas turbines (col. 2, lines 57-67).

In regards to claim 20, Jackson et al. (‘692) discloses an alloy having a composition relative to that of the instant invention as shown in the table below (claim 14).

Element	**From Instant Claims (atomic percent)**	**Jackson et al. ('692) (atomic percent)**	**Overlap (atomic percent)**
Pt & Pd	0 – about 49	0 – about 20	0 – about 20
W & Re	about 1 – about 6	0 – about 4	about 1 – about 4
Ru	0 – about 8	about 1.5 – about 4	about 1.5 – about 4
Zr, Ta, Ti, Hf	0 – less than 3	about 3 – about 9	-
Rh	at least about 50	balance (about 63 - about 95.5)	about 63 - about 95.5

The Examiner notes that the disclosed amounts of platinum, palladium, tungsten, rhenium, and ruthenium for a rhodium-based alloy overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of platinum, palladium, tungsten, rhenium, and

ruthenium for a rhodium-based alloy from the rhodium-based alloy disclosed by Jackson et al. (‘692) because Jackson et al. (‘692) discloses the same utility throughout the disclosed ranges.

With respect to "a fourth material, said fourth material comprising at least one of zirconium, yttrium, hafnium, tantalum, aluminum, titanium, scandium, elements of the lanthanide series, elements of the actinide series, and combinations thereof, wherein the fourth material is present in an amount from about 0.1 to about 2 atomic percent” as in lines 12-15 of claim 20, Jackson et al. (‘692) discloses about 3 to about 9 atomic percent of at least one precipitating-strengthening metal selected from the group consisting of zirconium, niobium, tantalum, titanium, hafnium and mixtures thereof. The instant claims recite “comprising” which would be open-ended and non-exclusive to additional, unrecited elements and Jackson et al. (‘692) recite an element such as niobium that is not present in the instant claims. MPEP 2111.03. For instance, 1 atomic percent niobium and 2 atomic percent of one or more of zirconium, hafnium, tantalum, aluminum, and titanium would be within the scope of Jackson et al. (‘692) and read on the instant claims. It would have been obvious to one of ordinary skill in the art to modify the ranges of zirconium, hafnium, tantalum, and titanium such that the "fourth material is present in an amount from about 0.1 atomic % to about 2 atomic %" in order to achieve the desired precipitation strengthening within the alloy (col. 5, line 59 – col. 6, line 18). MPEP 2144.05 II.

With respect to the limitation “wherein said alloy comprises an A1-structured phase at temperatures greater than about 1000°C in an amount of at least about 90%

by volume" of claim 20, the Examiner asserts that the alloy of Jackson et al. ('692) would have the A1 structured phase when subjected to the same treatment because Jackson et al. ('692) discloses substantially the same composition as that of the instant invention. Therefore, substantially similar properties would be expected. MPEP 2112.01 I.

Still regarding claim 20, Jackson et al. ('692) discloses about 63 to about 95.5 atomic percent rhodium and 0 to about 20 atomic percent of platinum and palladium (claim 14).

With respect to the recitation "for a gas turbine assembly", the Examiner notes that this recitation would not structurally limit the rhodium-based alloy and has therefore been considered an intended use of the alloy. MPEP 2111.02 II.

In regards to claim 21, Jackson et al. ('692) discloses a method for making an article having a composition relative to that of the instant invention as shown in the table on the following page (claim 14).

Element	**From Instant Claims (atomic percent)**	**Jackson et al. ('692) (atomic percent)**	**Overlap (atomic percent)**
Pt & Pd	0 – about 49	0 – about 20	0 – about 20
W & Re	about 1 – about 15	0 – about 4	about 1 – about 4
Ru	0 – about 10	about 1.5 – about 4	about 1.5 – about 4
Zr, Ta, Ti, Hf	0 – less than 3	about 3 – about 9	-
Rh	at least about 50	balance (about 63 - about 95.5)	about 63 - about 95.5

The Examiner notes that the disclosed amounts of platinum, palladium, tungsten, rhenium, and ruthenium for a rhodium-based alloy overlaps the composition of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was

made to select the claimed amounts of platinum, palladium, tungsten, rhenium, and ruthenium for a rhodium-based alloy from the rhodium-based alloy disclosed by Jackson et al. ('692) because Jackson et al. ('692) discloses the same utility throughout the disclosed ranges.

With respect to "a fourth material, said fourth material comprising at least one of zirconium, yttrium, hafnium, tantalum, aluminum, titanium, scandium, elements of the lanthanide series, elements of the actinide series, and combinations thereof, wherein the fourth material is present in an amount from about 0.1 to about 2 atomic percent" as in lines 11-14 of claim 21, Jackson et al. ('692) discloses about 3 to about 9 atomic percent of at least one precipitating-strengthening metal selected from the group consisting of zirconium, niobium, tantalum, titanium, hafnium and mixtures thereof. The instant claims recite "comprising" which would be open-ended and non-exclusive to additional, unrecited elements and Jackson et al. ('692) recite an element such as niobium that is not present in the instant claims. MPEP 2111.03. For instance, 1 atomic percent niobium and 2 atomic percent of one or more of zirconium, hafnium, tantalum, aluminum, and titanium would be within the scope of Jackson et al. ('692) and read on the instant claims. It would have been obvious to one of ordinary skill in the art to modify the ranges of zirconium, hafnium, tantalum, and titanium such that the "fourth material is present in an amount from about 0.1 atomic % to about 2 atomic %" in order to achieve the desired precipitation strengthening within the alloy (col. 5, line 59 – col. 6, line 18). MPEP 2144.05 II.

With respect to the limitation “wherein said alloy comprises an A1-structured phase at temperatures greater than about 1000°C in an amount of at least about 90% by volume” of claim 21, the Examiner asserts that the alloy of Jackson et al. (‘692) would have the A1 structured phase when subjected to the same treatment because Jackson et al. (’692) discloses substantially the same composition as that of the instant invention. Therefore, substantially similar properties would be expected. MPEP 2112.01 I.

With respect to the recitation “for making an article for use in high temperature, oxidative environments” of claim 21, the Examiner notes that this recitation would not structurally limit the rhodium-based alloy and has therefore been considered an intended use of the alloy. MPEP 2111.02 II.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson et al. (US 6,623,692) as applied to claim 17 above, and further in view of Manty et al. (US 4,305,998).

In regards to claim 18, Jackson et al. ('692) discloses a rhodium-based alloy as shown above, but Jackson et al. (‘692) does not specify that the alloy would be used as a coating.

Manty et al. (‘998) discloses applying a protective coating to an aircraft engine component wherein the coating would be made of chromium, molybdenum, niobium, tantalum, vanadium, zirconium, platinum, or a combination thereof or an alloy of any of these metals (abstract and col. 1, lines 12-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the rhodium-based alloy, as disclosed by Jackson et al. (‘692), as a coating for an aircraft engine component, as disclosed by Manty et al. (‘998), in order to prevent degradation of substrate engineering or mechanical properties, as disclosed by Manty et al. (‘998) (abstract).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson et al. (US 6,623,692) as applied to claim 17 above, and further in view of McGill et al. (US 4,399,199).

In regards to claim 18, Jackson et al. ('692) discloses a rhodium-based alloy as shown above, but Jackson et al. (‘692) does not specify that the alloy would be used as a coating.

McGill et al. (‘199) discloses forming thermal barrier layers (coatings) consisting essentially of platinum group metals (platinum, palladium, and rhodium) on turbine blades in order to provide a barrier to combustion gas penetration to the underlying substrate and increase the efficiency of the engine by forming a very smooth surface (col. 2, line 51 - col. 3, line 17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the rhodium-based alloy, as disclosed by Jackson et al. (‘692), as a coating for a turbine blade, as disclosed by McGill et al. ('199), in order to provide a barrier to combustion gas penetration to the underlying substrate and increase the efficiency of the engine by forming a very smooth surface, as disclosed by McGill et al. (‘199) (col. 2, line 51 - col. 3, line 17).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Claims 1-4, 10-13, 16-17, and 19-21 are rejected on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over claims 14 and 17-29 of U.S. Patent No. 6,623,692. Although the conflicting claims are not identical, they are not patentably distinct from each other because, as shown in the tables above, the instantly claimed amounts of platinum, palladium, tungsten, rhenium, and ruthenium are overlapped by the compositions of the rhodium-based alloy of claims 14 and 17-29 of U.S. Patent No. 6,623,692. With respect to "a fourth material, said fourth material comprising at least one of zirconium, yttrium, hafnium, tantalum, aluminum, titanium, scandium, elements of the lanthanide series, elements of the actinide series, and combinations thereof, wherein the fourth material is present in an amount from about 0.1 to about 2 atomic percent" as in claims 1, 10, 11, 20 and 21,

U.S. Patent No. 6,623,692 discloses about 3 to about 9 atomic percent of at least one precipitating-strengthening metal selected from the group consisting of zirconium, niobium, tantalum, titanium, hafnium and mixtures thereof. The instant claims recite “comprising” which would be open-ended and non-exclusive to additional, unrecited elements and U.S. Patent No. 6,623,692 recites an element such as niobium that is not present in the instant claims. MPEP 2111.03. For instance, 1 atomic percent niobium and 2 atomic percent of one or more of zirconium, hafnium, tantalum, aluminum, and titanium would be within the scope of U.S. Patent No. 6,623,692 and read on the instant claims. Furthermore, the Examiner asserts that the rhodium-based alloy of U.S. Patent No. 6,623,692 would have “an A1-structured phase at temperatures greater than about 1000°C, in an amount of at least 90% by volume” because the instant claims would have a composition substantially similar to that of the rhodium-based of U.S. Patent No. 6,623,692.

Response to Arguments

Applicant's arguments filed 12 May 2008 have been fully considered but they are not persuasive.

The Applicant primarily argues that the precipitation strengthening metals in Jackson et al. (‘692) would be used to promote formation of an $L1_2$ structured phase in the alloy and the $L1_2$ structured phase requires the strengthening metals to be present in an amount between 3% and 9% and as the precipitation strengthening metals in the alloy increases, the volume fraction of the $L1_2$ structured phase also increases and

there would be no motivation to modify the concentration of the precipitation strengthening agents to an amount between 0.1 and 2 atomic percent in the alloy of Jackson et al. ('692).

In response, the Examiner notes that claims 1, 10, 11, 20 and 21 recite “wherein said alloy comprises an A1-structured phase” and thus would not preclude the presence of $L1_2$ structured phase. Although, Jackson et al. (‘692) discloses about 3 to about 9 atomic percent of at least one precipitating-strengthening metal selected from the group consisting of zirconium, niobium, tantalum, titanium, hafnium and mixtures thereof. The instant claims recite “comprising” which would be open-ended and non-exclusive to additional, unrecited elements and Jackson et al. (‘692) recite an element such as niobium that is not present in the instant claims. MPEP 2111.03. For instance, 1 atomic percent niobium and 2 atomic percent of one or more of zirconium, hafnium, tantalum, aluminum, and titanium would be within the scope of Jackson et al. (‘692) and read on the instant claims. It would have been obvious to one of ordinary skill in the art to modify the ranges of zirconium, hafnium, tantalum, and titanium such that the "fourth material is present in an amount from about 0.1 atomic % to about 2 atomic %" in order to achieve the desired precipitation strengthening within the alloy (col. 5, line 59 – col. 6, line 18). MPEP 2144.05 II.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John P. Sheehan/
Primary Examiner, Art Unit 1793

JR